2017 Stream Survey Report

RADLEY CREEK TREND SITE

(WBIC 259300)

Waupaca County

Prepared by Joe Dax

Introduction and Survey Objectives

The entire 11.5 miles of Radley Creek are classified as Class I trout water, with brown trout as the dominant salmonid. Brook trout are present in lower numbers but are relegated to the extreme headwater reaches. Trout populations are supported entirely by natural reproduction with no stocking. Habitat development projects have been completed in several areas throughout the stream including the trend survey site. Fishing access is very good thru multiple DNR-managed properties. Objectives of the trend survey are to monitor relative abundance and size structure.

Regulations Category: Yellow **Size Limit:** All Trout - 8 inches **Daily Bag Limit:** 3 (in total)

WISCONSIN DNR CONTACT INFO.

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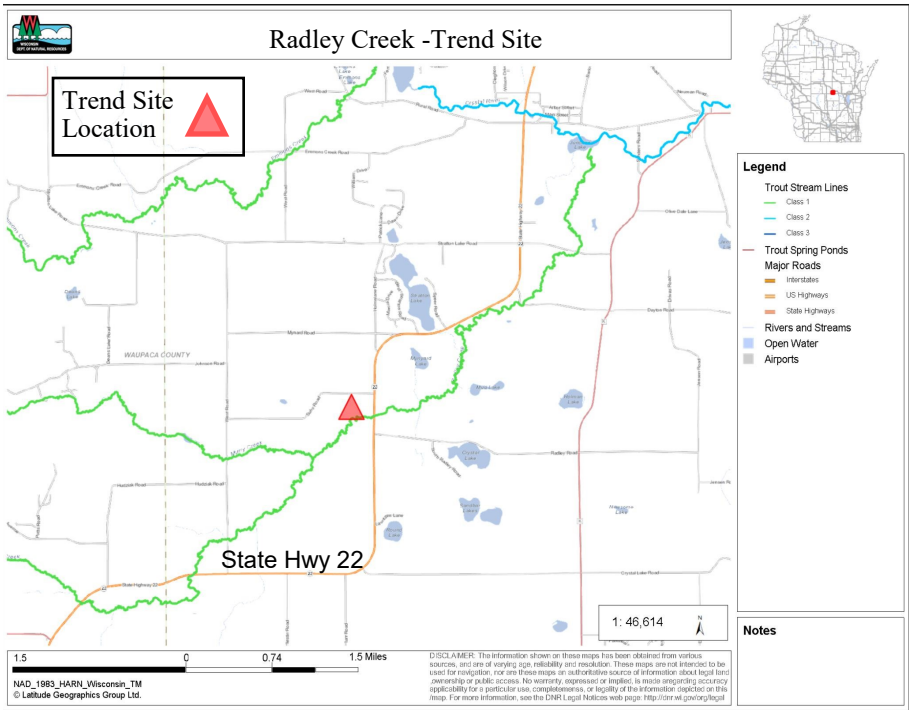
Survey Information						
Site location	**Survey Date**	**Station Length**	**Water Temperature (°F)**	**GPS (Start/Finish)**	**Gear**	**Number of Netters**
HWY 22 Trend Site	07/27/2017	2,000 ft.	53	44.2767,-89.1681 44.2759,-89.1928	Towed Barge Shocker	3



Metric Descriptions

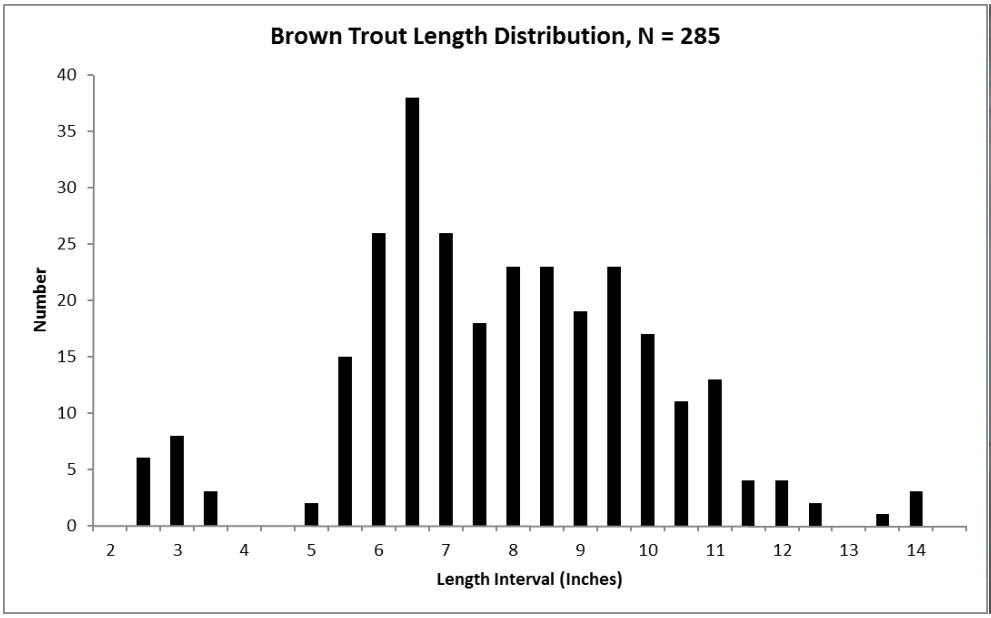
- **Catch per unit effort (CPUE)** is a method of quantifying fish population relative abundance. For all trout surveys, we typically quantify CPUE as the number of a given size class of trout captured per mile of stream. CPUE indexes are compared to other trout streams throughout the state of Wisconsin by what percentile (PCTL) they fall out in . For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state. CPUE percentiles can also be used to categorize trout abundance as low density (<33rd percentile), moderate density (33rd - 66th percentile), high density (66th - 90th percentile), and very high density (> 90th percentile).

- **Length frequency distribution** is a graphical representation of the number or percentage of fish captured by half inch or one inch size intervals.

Survey Method

- The Radley Creek trend site has been surveyed annually since 2005. This site is 2000 feet in length and is electrofished with a towed barge streamshocker. All captured trout are identified to species, measured for length, and examined for fin clips.

- Metrics used to evaluate fish populations include catch per unit effort by size class and length frequency distributions.



Size and Abundance (CPUE) Metrics - Brown Trout										
Year	Average Length (Inches)	Length Range (Inches)	Number Sampled	CPUE calculated as the number of trout of a given size per mile (Number in parentheses represents the statewide percentile of a given metric)						
				Total CPUE (PCTL)	YOY CPUE	≥6" CPUE (PCTL)	≥8" CPUE (PCTL)	≥10" CPUE (PCTL)	≥12" CPUE (PCTL)	≥15" CPUE (PCTL)
2007	6.8	(2.8-15.7)	592	1562 (90th)	243	982 (95th)	499 (90th)	158 (85th)	26 (65th)	3 (65th)
2008	6.7	(2.2-14.6)	553	1484 (90th)	260	1001 (95th)	437 (90th)	161 (85th)	29 (65th)	0
2009	6.8	(2.2-16.0)	421	1111 (85th)	214	694 (90th)	385 (90th)	158 (85th)	21 (60th)	3 (65th)
2010	6.7	(2.4-14.3)	507	1604 (90th)	418	1034 (95th)	449 (90th)	190 (85th)	28 (65th)	0
2011	7.1	(2.1-16.7)	525	1385 (90th)	208	897 (90th)	528 (90th)	227 (90th)	45 (75th)	5 (70th)
2012	7.6	(2.5-18.0)	494	1303 (90th)	140	892 (90th)	554 (90th)	237 (90th)	50 (80th)	8 (75th)
2013	7.4	(2.2-19.5)	514	1356 (90th)	142	942 (95th)	536 (90th)	179 (85th)	53 (80th)	11 (80th)
2014	7.3	(2.1-14.0)	449	1185 (85th)	74	778 (90th)	456 (90th)	185 (80th)	24 (65th)	0
2015	6.7	(2.4-13.3)	314	829 (80th)	92	528 (85th)	206 (80th)	63 (65th)	11 (50th)	0
2016	7.6	(2.7-14.1)	327	863 (85th)	29	668 (90th)	330 (85th)	127 (80th)	26 (65th)	0
2017	8.1	(2.8-14.1)	285	752 (80th)	45	662 (90th)	377 (90th)	145 (80th)	26 (65th)	0

Summary

- Results from the 2017 survey shows that Radley Creek continues to have good numbers of average sized brown trout. Total trout density as well as densities of all adult size classes between 6 and 12 inches ranked in the 65th - 90th percentiles when compared to other trout streams throughout the state of Wisconsin. However, numbers of trout have decreased dramatically over the past four years. Total brown trout CPUE averaged 1,401 brown trout per mile of stream between 2007 and 2013. Between 2014 and 2017, total brown trout CPUE averaged only 907 brown trout per mile of stream.
- Brown trout young of year (YOY) density has also been decreasing over the past several years. Between 2007 and 2013, brown trout YOY CPUE averaged 232 brown trout per mile of stream. Over the last four years, brown trout YOY CPUE averaged only 60 brown trout per mile of stream. Radley Creek is a class I trout stream that is sustained solely by natural reproduction. Declines in recruitment may be driving the declines in adult abundance.
- Water temperatures don't appear to be driving the observed declines in brown trout numbers. Water temperatures over the last four years have averaged 53 degrees. One potential cause for the decline is changes in habitat. Influxes of sand into this segment of stream could be limiting brown trout habitat. Brown trout may simply be moving to segments of the stream with more favorable habitat. Results from the next rotational survey where other segments will be sampled should provide evidence of stream-wide trends.
- Habitat work done in the stream throughout the DNR property where the trend site is located is likely why Radley Creek has historically been able to support such high numbers of brown trout. If sand has accumulated in this segment of stream, additional brushing to narrow the stream and increase flows may help flush sand out. Areas for expansion of habitat work should be found to try to sustain brown trout numbers throughout Radley Creek.